

WHAT IS CLAIMED IS:

1. A method for processing an image in a printer capable of printing a two-color image, comprising the steps 5 of:

setting a primary color and a secondary color as printable colors in the printer;

receiving an original image; and

producing color difference values associated with the 10 primary color, the secondary color and a white color on an original image pixel-by-pixel basis, and converting a corresponding pixel color of the original image into the primary, secondary or white color associated with a smallest color difference value.

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2. The method as set forth in claim 1, wherein the color converting step comprises the steps of:

on the pixel-by-pixel basis, calculating a first color difference value $\Delta Col1$ between the corresponding pixel color 20 of the original image and the primary color according to the equation $\Delta Col1 = |R_o - R_1| + |G_o - G_1| + |B_o - B_1| - Vcb$, calculating a second color difference value $\Delta Col2$ between the corresponding pixel color of the original image and the secondary color according to the equation $\Delta Col2 = |R_2 - R_o| + |G_2 - G_o| + |B_2 - B_o| - Vcs$, and 25 calculating a third color difference value $\Delta Col3$ between the

corresponding pixel color of the original image and the white color according to the equation

$$\Delta Col3 = |255 - R_o| + |255 - G_o| + |255 - B_o|, \text{ wherein } R_o, G_o \text{ and } B_o \text{ are RGB values of the corresponding pixel color of the original image, } R_1, G_1 \text{ and } B_1 \text{ are RGB values of the primary color, } R_2, G_2 \text{ and } B_2 \text{ are RGB values of the secondary color, values of 255 are RGB values of the white color, } V_{cb} \text{ is a weight value for the primary color, } V_{cs} \text{ is a weight value for the secondary color, and the weight values } V_{cb} \text{ and } V_{cs} \text{ are arbitrarily set;}$$

5 and

10 converting the corresponding pixel color into a conversion color associated with the smallest color difference value of the calculated color difference values $\Delta Col1$, $\Delta Col2$ and $\Delta Col3$.

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3. The method as set forth in claim 1, wherein the color converting step comprises the steps of:

setting an arbitrary color to a boundary color;

on the pixel-by-pixel basis, calculating a first color difference value $\Delta Col1$ between the corresponding pixel color of the original image and the primary color according to the equation

$$\Delta Col1 = |R_o - R_1| + |G_o - G_1| + |B_o - B_1| - V_{cb},$$

20 calculating a second color difference value $\Delta Col2$ between the corresponding pixel color of the original image and the secondary color according to the equation

$$\Delta Col2 = |R_o - R_2| + |G_o - G_2| + |B_o - B_2| - V_{cs}, \text{ and}$$

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calculating a third color difference value $\Delta Col3$ between the corresponding pixel color of the original image and the white color according to the equation

$$\Delta Col3 = |255 - R_o| + |255 - G_o| + |255 - B_o|$$
, wherein R_o , G_o and B_o are RGB values of the corresponding pixel color of the original image, R_1 , G_1 and B_1 are RGB values of the primary color, R_{th} , G_{th} and B_{th} are RGB values of the boundary color, values of 255 are RGB values of the white color, V_{cb} is a weight value for the primary color, V_{cs} is a weight value for the secondary color, and the weight values V_{cb} and V_{cs} are arbitrarily set;

5 comparing the calculated color difference values and producing the smallest color difference color; and

10 converting the corresponding pixel color into the primary color if the first color difference value $\Delta Col1$ is smallest, converting the corresponding pixel color into the secondary color if the second color difference value $\Delta Col2$ is smallest, and converting the corresponding pixel color into the white color if the third color difference value $\Delta Col3$ is smallest.

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4. The method as set forth in claim 1, further comprising the step of:

converting the received original image into a bitmap image before the color converting step is carried out.

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5. The method as set forth in claim 2 or 3, wherein the color converting step comprises the step of:

deciding a conversion color according to priorities in order of the primary, secondary and white colors if two or 5 more of the first, second and third color difference values correspond to the smallest color difference value as a result of the comparison.

6. The method as set forth in claim 2 or 3, wherein the 10 weight value for the primary color is set to be large if a ratio of the primary color is desired to be increased in the two-color image, and wherein the weight value for the secondary color is set to be large if a ratio of the secondary color is desired to be increased in the two-color 15 image.